GRAIN TRANSPORTATION REPORT

Transportation & Marketing, Agricultural Marketing Service
United States Department of Agriculture

JANUARY 15, 2004

TM GRAIN TRANSPORT COST INDICATORS*	Truck	Rail	Barge	Ocean	
				Gulf	Pacific
01/14/04	106	128	111	260	320
Compared with Last Week	↑	↓	Unchanged	↑	↑

*Indicator: Base year 2000=100; Weekly updates include Truck=diesel; Rail=nearby secondary rail market; Barge=spot Illinois River Basis; Ocean vessel based on routes to Japan

Figure 1--U.S. Gulf to Japan Ocean Freight Rates Are Above 5-year Average

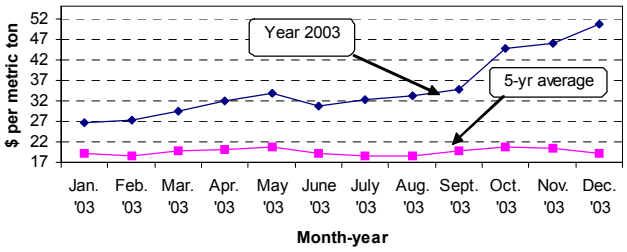
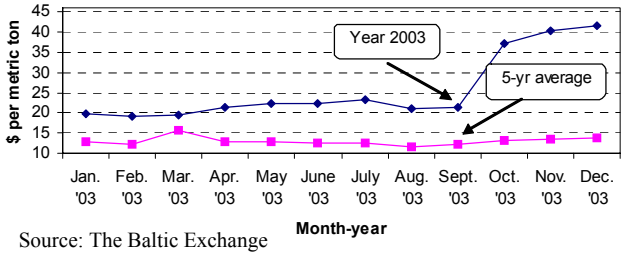
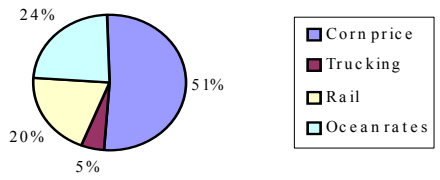


Figure 2--U.S. PNW to Japan Ocean Freight Rates Are Above 5-year Average



Source: The Baltic Exchange

Figure 3--Total Landed Cost (per metric ton) of Shipping Grains from Minneapolis to Japan Via PNW



Source: USDA/AMS/TMP/Transportation Services Branch

Ocean Freight Rates Hit Record High for Both Gulf and PNW in December 2003. During December, ocean freight rates on two major grain routes were more than double their 5-year averages. The December 2003 ocean freight rate of $50.75 per metric ton (mt) for the U.S. Gulf to Japan (Gulf) and $41.70 per metric ton for the Pacific Northwest to Japan (PNW) routes were the highest in recent years. According to the Baltic Exchange, the average daily ocean freight rates for the Gulf route have been increasing since July 2003 after a slight dip in June. The rates for the PNW increased continuously from September 2003 until December 2003 after an earlier dip in August (figures 1and 2).

Higher global demand for ocean transportation of iron ore and coal, especially to Asia, and the tightening of bulk vessel supply are two of the factors contributing to high rates. In addition, rising fuel costs and increased expansion in the Chinese economy continue to play significant roles in the bulk freight market. Newly built vessels are scheduled for delivery later this year and continually till 2007. The arrival of new vessels may slow down the growing ocean freight rates and provide relief for shippers.

Total Landed Cost Affected by Higher Ocean Freight Rates. Factoring the costs of different modes and routes of transportation and the average farm price of grains, it was determined that the total landed cost of shipping grains from Minneapolis to Japan via the PNW was $170.68 per metric ton. The cost breakdown follows: Corn price = $86.61/mt, trucking = $7.87/mt, rail = $34.50/mt, and ocean freight rates = $41.70/mt. Transportation costs account for 49 percent of the total landed cost of shipping grains (figure 3). *Surajudeen.Olowolayemo@usda.gov*

Report is prepared by Deen Olowolayemo, Johnny Hill, Karla Martin and Delmy Salin, Agricultural Economists, Transportation & Marketing, Agricultural Marketing Service, USDA (202) 690-1304. Support provided by Upper Great Plains Transportation Institute, North Dakota State University. This report can be found on the Internet at www.ams.usda.gov/tmd/grain.htm. E-mail comments and questions to Surajudeen.Olowolayemo@usda.gov .

Contents

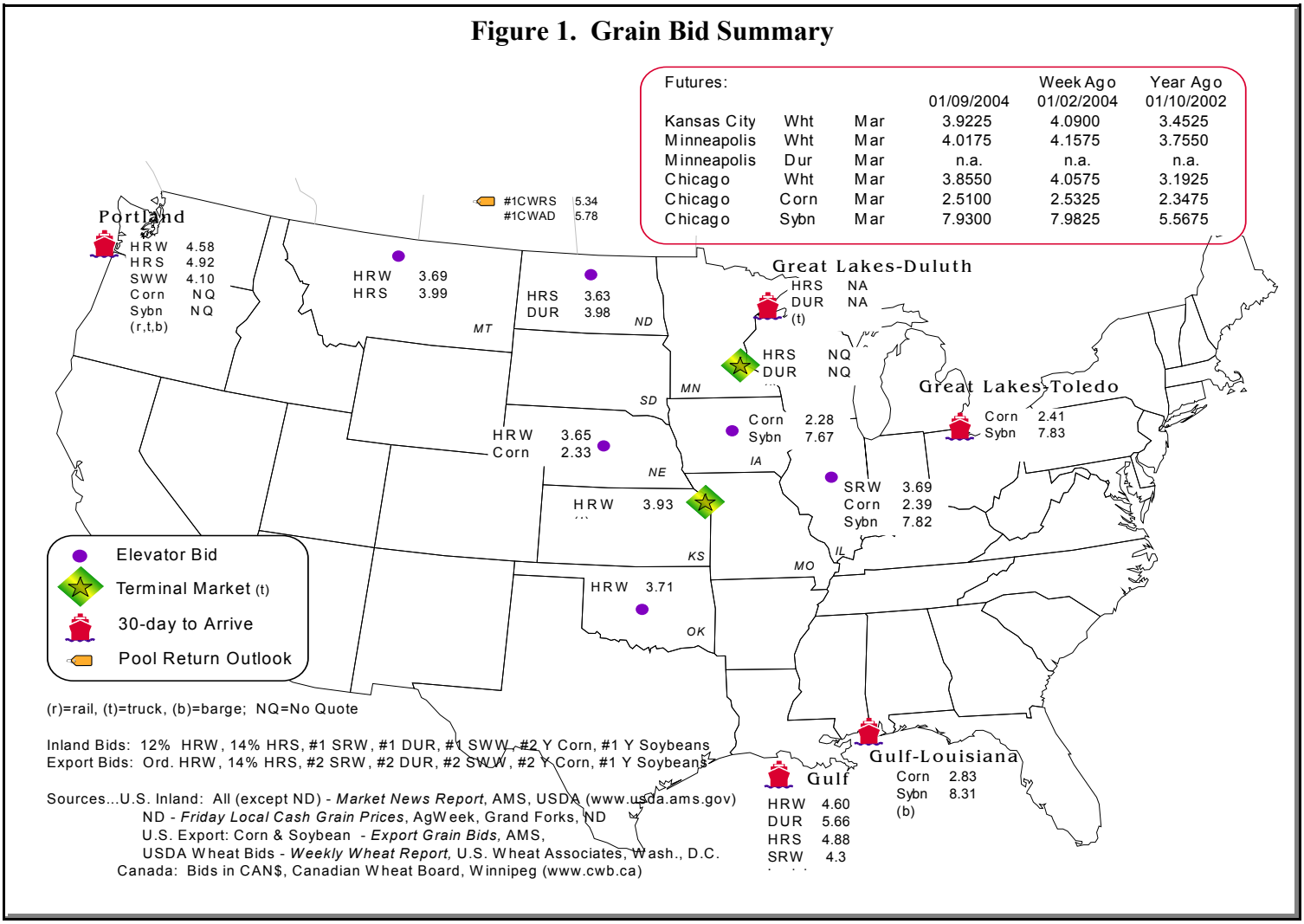
The Grain Transportation Report is a weekly news source for grain logistics. Detailed data and trend information on five major modes: barge, truck, rail, container, and vessel, provide timely insight into grain transport. The report is offered to policymakers and industry as a tool in day-to-day decision making and longer-term strategic planning for an effective and efficient U.S. grain logistics system.

Table 1-- Market update: U.S. origins to export position price spreads (per bushel)

Commodity	Origin--Destination	This week	Last week
Corn	IL -- Gulf	-0.44	n/a
Corn	NE -- Gulf	-0.50	n/a
Soybean	IA -- Gulf	-0.64	n/a
HRW	KS -- Gulf	-0.67	-0.74
HRS	ND -- Portland	-1.29	-1.28

The **Grain Bid Summary** illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.

Figure 1. Grain Bid Summary



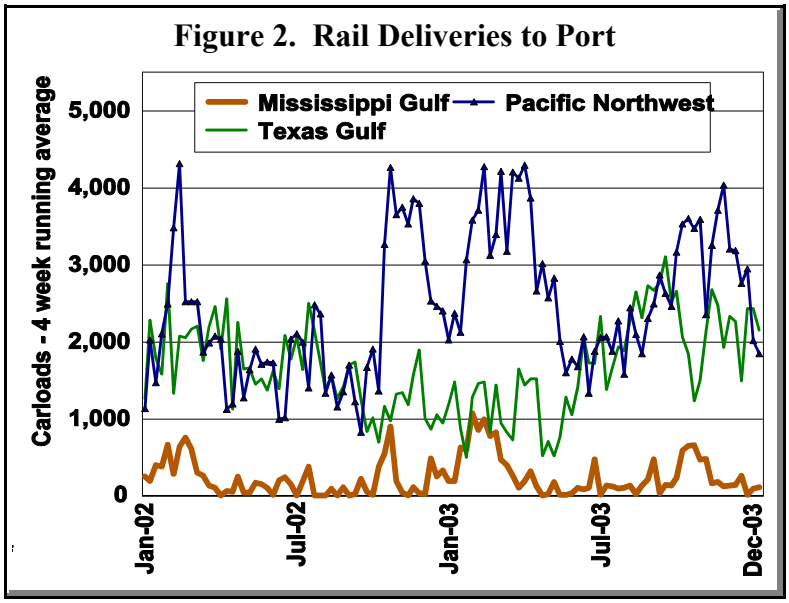
RAIL TRANSPORTATION

Table 2--Rail deliveries to port (carloads)

	Mississippi Gulf*	Texas Gulf	Pacific Northwest	Atlantic & East Gulf	Total
Week Ending:					
12/31/03	92	2,434	2,019	237	4,782
01/07/04	113	2,159	1,853	148	4,273
2004 YTD	113	2,159	1,853	148	4,273
2003 YTD	190	1,197	2,025	720	4,132
% 2003 YTD	59%	180%	92%	21%	103%
Total 2003	15,026	90,749	148,843	20,746	275,364
Total 2002	11,127	85,822	113,857	21,562	232,368

Source: Transportation & Marketing/AMS/USDA; (*) Incomplete Data

Figure 2. Rail Deliveries to Port



Railroads originate approximately 40% of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

Figure 3. Total U.S. Grain Car Loadings for Class I Railroads

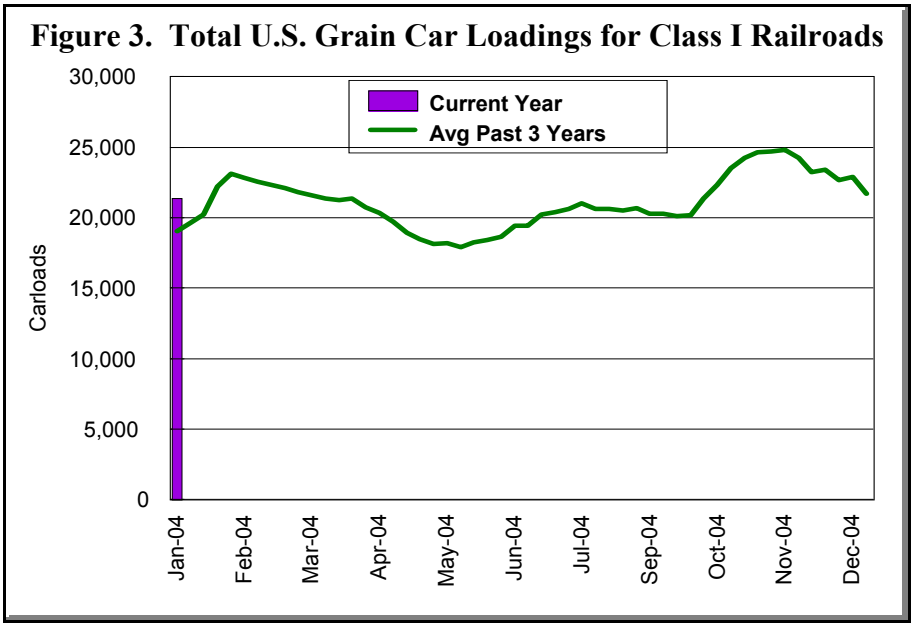


Table 3--Class I rail carrier grain car bulletin (Grain carloads originated)

	East		West			U.S. Total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
01/03/04	2,994	3,078	8,664	353	4,914	20,003	4,301	3,544
This Week Last Year	2,646	2,642	6,606	639	6,226	18,759	3,385	2,299
2004 YTD	2,994	3,078	8,664	353	4,914	20,003	4,301	3,544
2003 YTD	2,646	2,642	6,606	639	6,226	18,759	3,385	2,299
% 2003 YTD	113%	117%	131%	55%	79%	107%	127%	154%
2003 Total	146,425	171,260	416,371	24,506	339,379	1,097,941	197,993	198,185
U.S. rail covered hopper cars online index*								
Dec-03	96.4	100.4	93.0	94.6	95.6	95.9		

Source: Association of American Railroads; *Base Year =2001, Index based on Number of Covered Hopper Cars Online (available for Service).

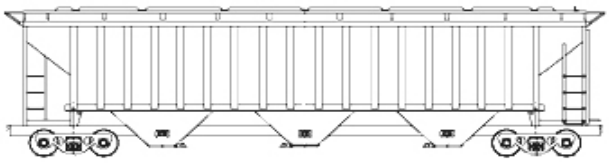


Table 4--Tariff rail rates for unit train shipments*

Date effective	Commodity	Origin	Destination	Rate per car	Rate per MT	Rate/per bushel**
01/05/04	Wheat	Kansas City, MO	Galveston, TX	$1,820	$20.06	$0.55
01/05/04	Wheat	Minneapolis, MN	Portland, OR	$4,148	$45.72	$1.24
01/05/04	Wheat	St. Louis, MO	Houston, TX	$1,945	$21.44	$0.58
01/05/04	Wheat	Kansas City, MO	Laredo, TX	$2,280	$25.13	$0.68
01/05/04	Wheat	Chicago, IL	Albany, NY	$1,834	$20.22	$0.55
01/05/04	Corn	Minneapolis, MN	Portland, OR	$3,240	$35.71	$0.91
01/05/04	Corn	Chicago, IL	Baton Rouge, LA	$2,736	$30.16	$0.77
01/05/04	Corn	Council Bluffs, IA	Baton Rouge, LA	$2,170	$23.92	$0.61
01/05/04	Corn	Evansville, IN	Raleigh, NC	$1,841	$20.29	$0.52
01/05/04	Corn	Des Moines, IA	Laredo, TX	$2,864	$31.57	$0.80
01/05/04	Soybean	Minneapolis, MN	Portland, OR	$3,110	$34.28	$0.93
01/05/04	Soybeans	Chicago, IL	Baton Rouge, LA	$2,736	$30.16	$0.82
01/05/04	Soybeans	Council Bluffs, IA	Baton Rouge, LA	$2,799	$30.85	$0.84
01/05/04	Soybeans	Des Moines, IA	Laredo, TX	$2,864	$31.57	$0.86
01/05/04	Soybeans	Evansville, IN	Raleigh, NC	$1,841	$20.29	$0.55

Sources: www.bnsf.com, www.cpr.ca, www.csx.com, www.uprr.com
*A unit train refers to shipments of at least 52 cars.
**Approximate load per car = 100 tons: Corn 56 lbs/bu, Wheat & Soybeans 60 lbs/bu*

Table 5--Secondary rail car market,
Average premium/discount to tariff, $/car - last week

	Delivery Period			
	Feb-04	**Mar-04**	**Apr-04**	**May-04**
BNSF-GF	$35	$10	$(6)	$(8)
UP-Pool	$30	$18	$(5)	$(5)

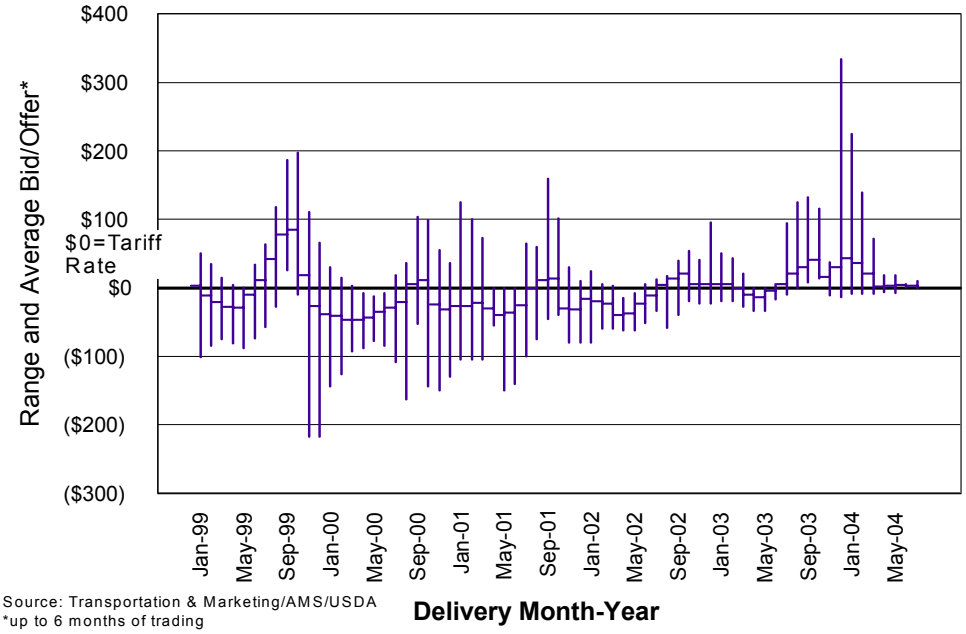
Rail service may be ordered directly from the railroad via **Auction** for guaranteed service or tariff for non-guaranteed service, or through the secondary market. The **Secondary Rail Market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The auction and secondary rail values are indicators of rail service quality and demand/supply.

Table 6--Railroad car 'Auction' results
Average premium/discount to tariff, $/car - last auction

Delivery for:	**Feb-04**	**Mar-04**	**Apr-04**
COT/N. Grain	no offer	no offer	no bid
COT/S. Grain	no offer	no offer	no bid
GCAS/Region 1	no bid	no bid	no offer
GCAS/Region 2	$8	$1	no offer

Source: Transportation & Marketing/AMS/USDA.
COT=Certificate of Transportation; GCAS=Grain Car Allocation System

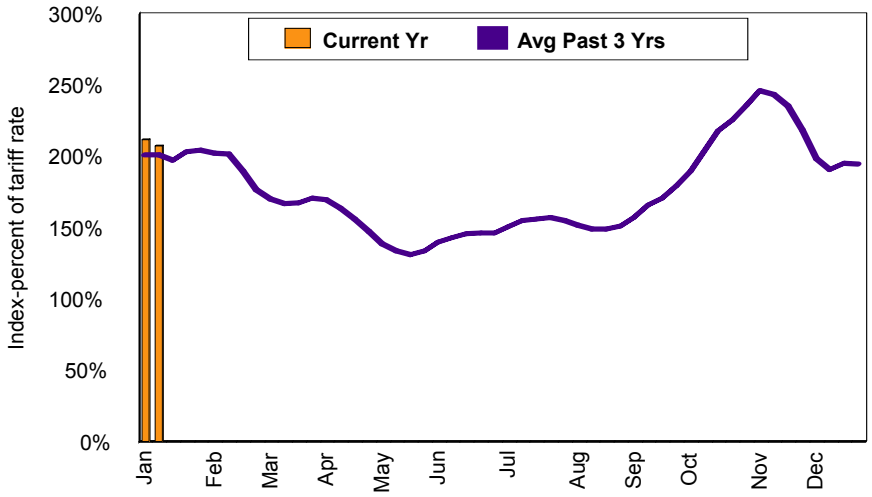
Figure 4. Secondary Rail Car Market



Source: Transportation & Marketing/AMS/USDA
*up to 6 months of trading

BARGE TRANSPORTATION

Figure 5. Illinois River Barge Rate Index - Rate Quotes



The **Illinois River Barge Rate Index** averaged 183% of the Benchmark Tariff Rate between 1999 and 2001, based on weekly market quotes. The **Index**, along with **Rate Quotes** and **Futures Market** bids are indicators of grain transport supply and demand.

Calculating **Barge Rate** Per Ton: Index × 1976 Tariff Benchmark Rate per Ton

Select applicable index from market quotes included in tables on this page. The 1976 benchmark rates per ton are provided in map below.

Table 7-- Barge rate quotes: Southbound barge freight
Index=percent of tariff, based on 1976 tariff benchmark rate

Location	1/7/04	12/31/03	Feb '04	Apr '04
Twin Cities	nq	nq	nq	nq
Mid-Mississippi	155	nq	150	174
Illinois River	200	201	203	170
St. Louis	162	165	158	144
Lower Ohio	165	164	161	147
Cairo-Memphis	153	155	145	131

Source: Transportation & Marketing/AMS/USDA, nq= no quote

Table 8--Barge futures market
Southbound barge freight nominal/cash basis values
Index=percent of tariff, based on 1976 tariff benchmark rate

Week ended	River/region	Contract period	Rate	
			futures	cash
01/13/04	St. Louis	Feb.	n/a	160
		Apr.	n/a	153
		June	n/a	153
		July	n/a	160
		Aug.	n/a	165
	Illinois River	Feb	n/a	200
		Apr.	n/a	170
		June	n/a	163
		July	n/a	168
		Aug.	n/a	180

Source: St. Louis Merchants Exchange

Figure 6. Benchmark Tariff Rates

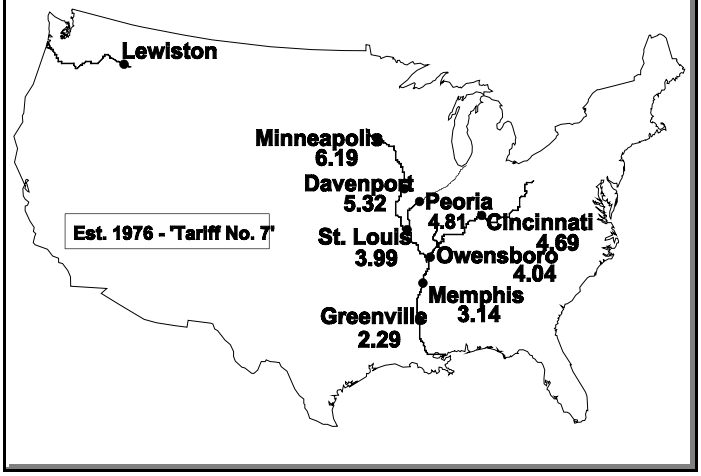


Figure 7. Barge Movements on the Mississippi River (Lock 27)

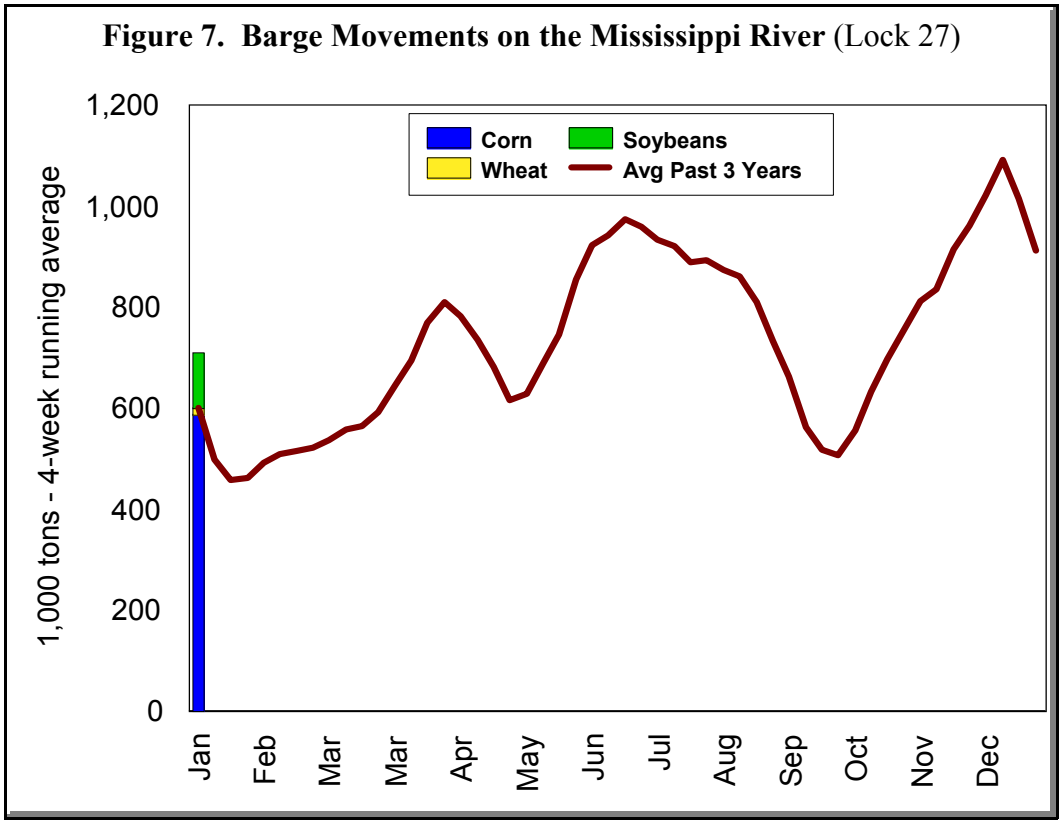


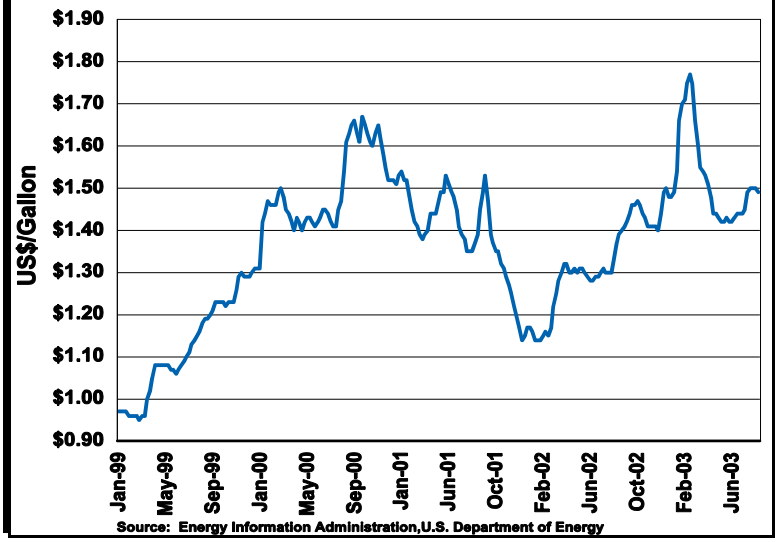
Table 9--Barge grain movements (1,000 tons)

Week ending 01/03/04	Corn	Wht	Sybn	Total
Mississippi River				
Rock Island, IL (L15)	0	0	0	0
Winfield, MO (L25)	0	0	0	0
Alton, IL (L26)	361	3	43	407
Granite City, IL (L27)	373	3	43	419
Illinois River (L8)	395	2	41	438
Ohio River (L52)	66	11	48	125
Arkansas River (L1)	0	13	9	22
2004 YTD	439	27	99	565
2003 YTD	391	21	179	620
% 2003 YTD	112%	129%	55%	91%
2003 Total	29,898	2,787	9,146	42,526

Source: U.S. Army Corp of Engineers
YTD and Calendar year total includes Miss/27, Ohio/52 and Ark/1.

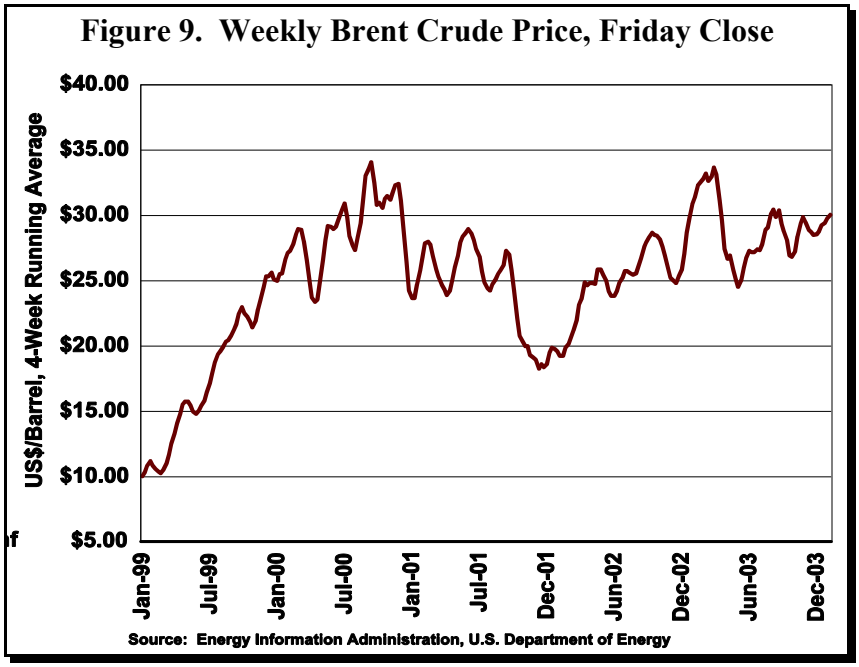
TRUCK TRANSPORTATION

Figure 8. Weekly U.S. Retail Road Diesel Price



The weekly **Diesel Price** provides a proxy for trends in U.S truck rates. Diesel fuel is a significant expense for truck grain movements, accounting for 37% of the estimated variable cost. **Crude Oil Price** is an indicator in future diesel price trends.

Figure 9. Weekly Brent Crude Price, Friday Close



Light Sweet Crude is exchanged on the New York Mercantile Exchange. North Sea oil has a "benchmark" role in crude oil pricing. Brent crude, a blend of North Sea oils, is traded on the International Petroleum Exchange in London.

Table 10--Crude oil prices (US$ per Barrel)-01/13/04

Type	This week	Last week	Change
Light Sweet Crude (NYMEX)	33.73	33.17	↑
Brent Crude	32.45	31.16	↑

Source: U.S. Department of Energy, www.eia.doe.gov; *U.S. Refiner Crude Acquisition Cost, Composite Domestic & Import

GRAIN EXPORTS

Table 11--U.S. export balances (1,000 Metric Tons)

Unshipped export balance	Wheat						Corn	Soybean	Total
	HRW	*SRW*	*HRS*	*SWW*	*DUR*	All Wheat			
01/01/04	3,208	611	1,406	1,246	182	6,654	9,207	8,795	24,656
This Week Year Ago	1,017	580	1,161	535	123	3,415	5,860	7,980	17,255
Cumulative Exports-Crop Year									
2003/04 YTD	4,682	1,707	4,244	2,181	521	13,335	13,998	12,010	39,343
2002/03 YTD	7,004	2,322	4,037	2,476	693	16,531	16,608	14,021	47,160
% 2002/03 YTD	67%	74%	105%	88%	75%	81%	84%	86%	83%
2001/02 Total	8,761	5,485	5,582	3,175	1,133	24,135	48,003	29,926	102,064
2000/01 Total	9,314	4,445	5,775	5,156	1,130	25,819	47,734	27,567	101,120

Source: Foreign Agricultural Service/USDA; YTD: Year-to-Date; Crop Year: Wheat=5/31-6/01, Corn & Soybeans=9/01-8/31

Figure 10. U.S. Grain, Unshipped Export Balance
Includes Wheat, Corn, and Soybean Sales

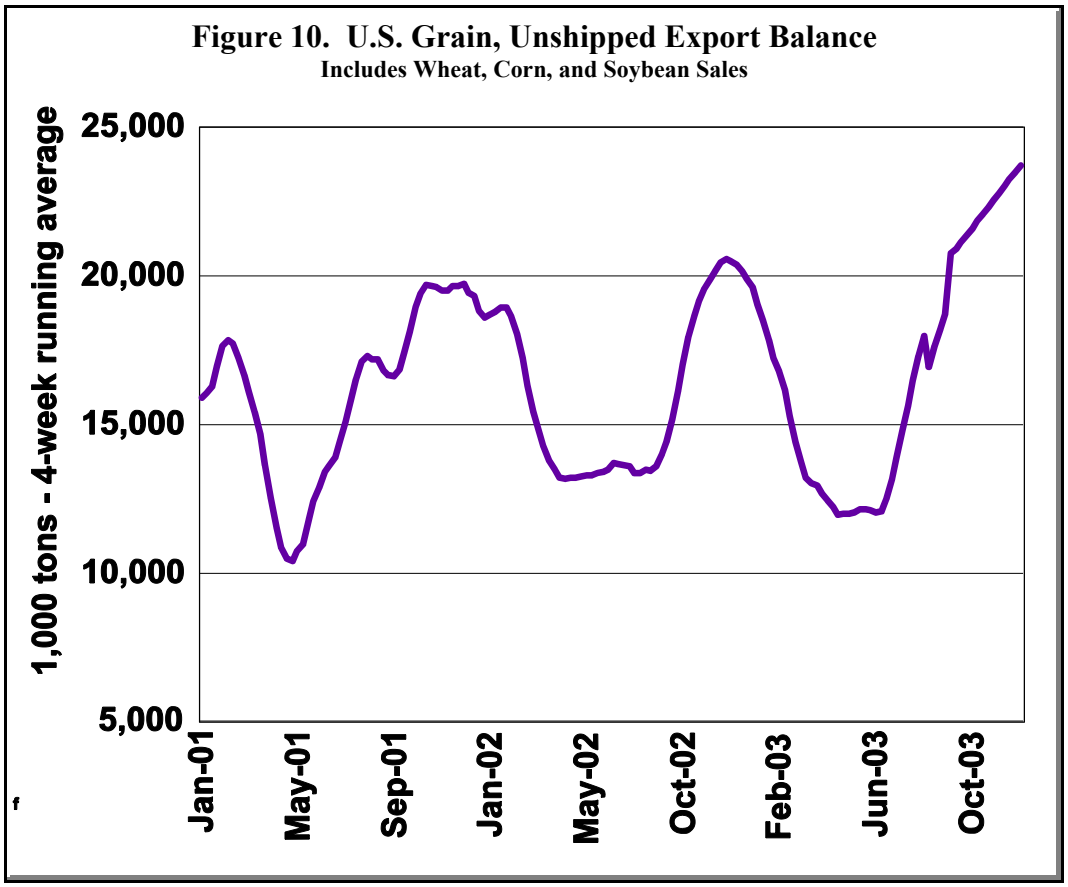
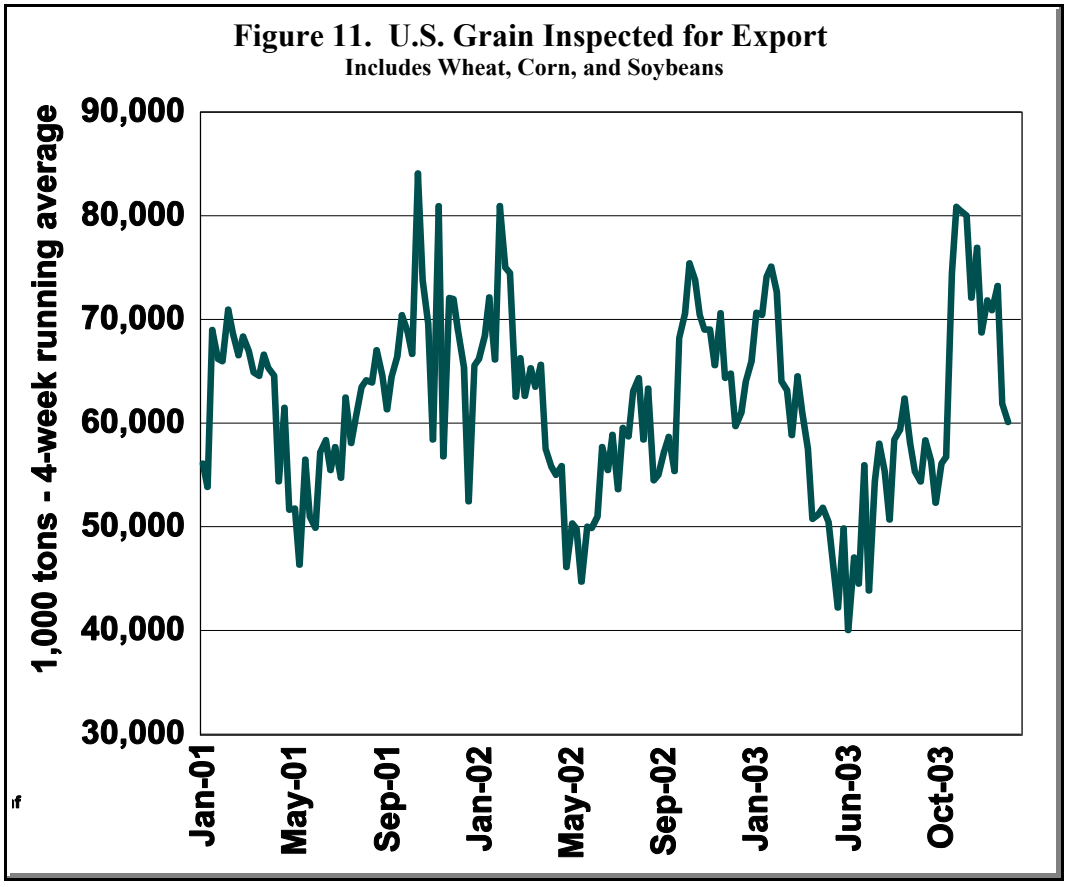


Table 12--Select U.S. port regions - grain inspections for export (1,000 metric tons)

Date	Pacific Region			Mississippi Gulf			Texas Gulf			Port Region Total		
	Wheat	*Corn*	*Soybn*	*Wheat*	*Corn*	*Soybn*	*Wheat*	*Corn*	*Soybn*	*Pacific*	*Mississippi*	*Texas*
01/08/04	272	61	102	113	768	385	214	2	0	435	1,266	217
2004 YTD	423	198	273	248	1,367	777	325	41	0	893	2,392	365
2003 YTD	411	193	97	301	1,140	1,306	157	8	0	701	2,748	165
% 2003 YTD	103%	102%	0%	82%	120%	60%	207%	504%	0%	128%	87%	221%
2003 Total	8,764	5,450	5,114	5,855	30,352	18,972	7,032	746	348	19,328	55,179	8,125

Source: Federal Grain Inspection Service YTD-Year-to-Date



The U.S. Exports Approximately One-Quarter of the Grain it Produces. On average, it includes nearly 45% of U.S. grown wheat, 35% of U.S. grown soybeans, and 20% of the U.S. grown corn.

Over 60% of these U.S. export grain shipments departed through Louisiana Gulf region in 2002.

Figure 12. Gulf Port Grain Vessel Loading
Past 7 Days

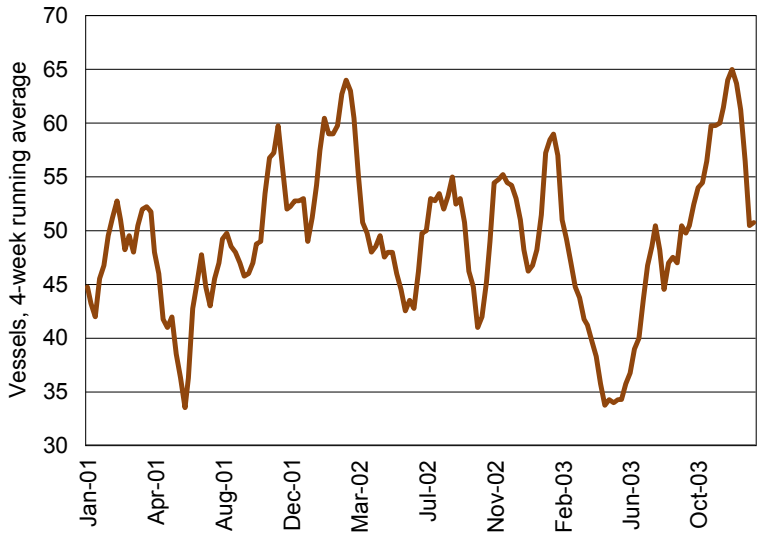


Table 13--Weekly port region grain ocean vessel activity (number of vessels)

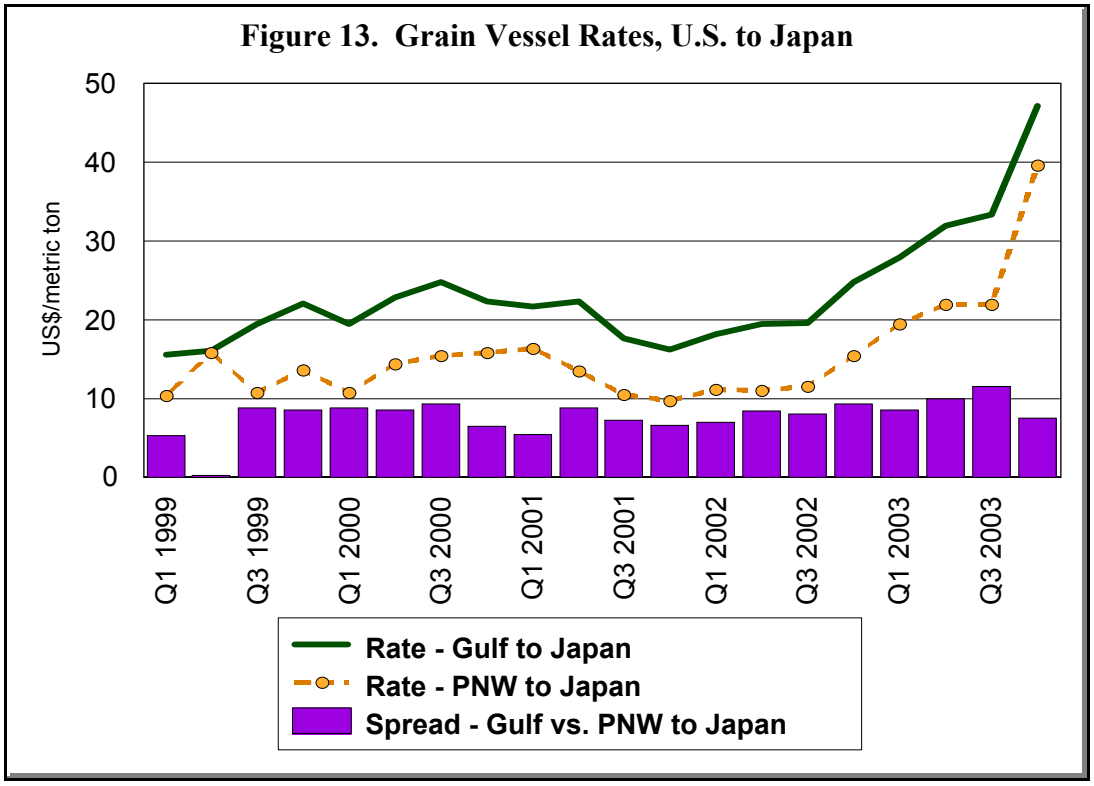
Date	Gulf			Pacific Northwest	Vancouver B.C.
	In Port	Loaded 7-Days	Due Next 10-Days	In Port	In Port
01/01/04	28	36	62	13	4
01/08/04	37	53	78	10	6
2003 Range	(11..47)	(30..76)	(39..93)	(3..13)	(1..15)
2003 Avg	31	49	62	9	6

Source: Transportation & Marketing/AMS/ USDA

Table 14--Quarterly ocean freight rates (average rates & percentage changes, U.S. dollars/metric ton)

	2003 4th Qtr	2002 4th Qtr	Change %		2003 4th Qtr	2002 4th Qtr	Change %
Gulf to				**Pacific NW to**			
Japan	$41.83	$24.75	69%	Japan	-	$15.39	-
Taiwan	$44.00	-	-				
N. Europe	-	$18.07	-	**Argentina/Brazil to**			
N. Africa	$35.00	$18.33	91%	Med. Sea	$38.50	$22.00	75%
Med. Sea	$31.75	-	-	N. Europe	-	$22.63	-

Source: Maritime Research, Inc.



Source: The Baltic Exchange

Table 15--Ocean freight rates for selected shipments
Week Ending 01/10/04

Export region	Import region	Grain	Month	Volume loaded (Tons)	Freight rate ($/ton)
U.S. Gulf	Peru	Grains	Dec 29/Jan 7	12,000	$80.00*
U.S. Gulf	China	Hvy Grain	Jan 25/39	55,000	$53.25
U.S. Gulf	Algeria	Wheat	Jan 8/10	20,000	$46.00
River Plate	Morocco	Wheat	Jan 10/20	30,000	$52.50

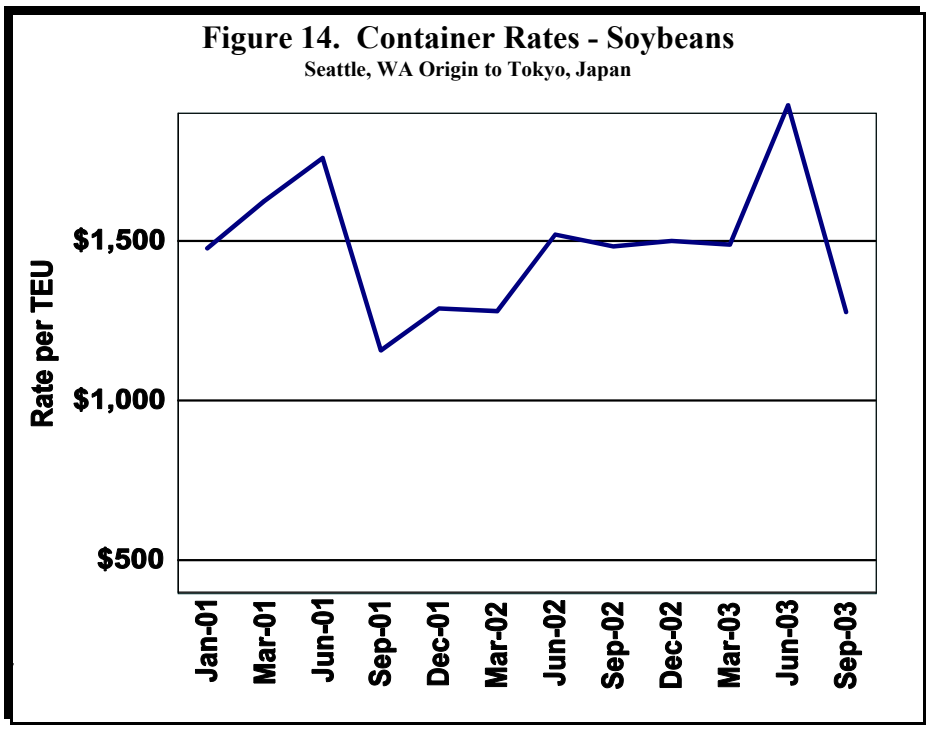
Source: Maritime Research Inc.
Rates shown are for metric ton (2,204.62 lbs.=one metric ton), F.O.B., except where otherwise indicated; op=option

*Most food aid from the United States is required to be shipped on U.S. flag vessels. The vessels are of limited availability resulting in higher rates. In addition, destinations receiving food aid generally lack adequate port unloading facilities, requiring the vessel to remain in port for a longer duration than normal.

CONTAINER

Container Ocean Freight Rates
Average rate per twenty-equivalent-unit (TEU), weighed by shipping line market share
Source: Transportation & Marketing/AMS/USDA, Quarterly Updates

Figure 14. Container Rates - Soybeans
Seattle, WA Origin to Tokyo, Japan



Approximately 420,000 MT of grain and oilseed exports were marketed via container in 2001. This volume increased 26% compared to 1997.

Figure 15. Container Rates - Feed Grain
Seattle, WA Origin to Selected Destinations